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Health care systems and the problem of classification

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Abstract

Classification is integral to comparison. The aim of this paper is to reflect on the nature, purpose and limits of classification in comparative health policy. We begin by describing the role of classification in comparative research design, discussing Weber's concept of the 'ideal type' and drawing on the sociology of scientific knowledge to reflect on classification as an essentially social and uncertain process. In the sections which follow, we present an outline history of the classification of health systems, identifying a 'normal science' of comparative studies of health policy and exploring a number of theoretical, conceptual and methodological issues which arise from it.

"There is more to the urge for classification than the desire for complexity. Finding different manifestations or types of a given phenomenon is the beginning of orderly control and prediction. Taxonomy before ontogeny or phylogeny. Moreover, to find the *basis* for classification reveals the hidden meanings and significance of the phenomenon, suggesting what the important hypotheses ought to be concerned with" (Lowi 1972, p 299, italics in original).

Introduction: the purposes and processes of classification

Why classify?

Classification is an intrinsic aspect of cognition. We can see and know things only to the extent that we have categories available to which they can be assigned. It is through this concerted exercise of naming that our world of infinite instances may become an ordered and comprehensible place, one in which an individual mind may appreciate the similarities and differences between dog and cat, for example, making it possible to classify each as distinct species belonging to a shared category of animal. Cognition always implies joint processes of comparison and categorization which are at once manifold and iterative. By making such classifications, generalizations regarding the members or properties of given categories are also made possible. In this way, we might think of classification as the foundation of all science.

For science is irrevocably linked to classification. Science begins with renaming the everyday, and proceeds by renaming again, discriminating anew. Typically, this process leads to further refinements and modifications of our understandings of subject matter. More dramatically, however, it may result in large paradigmatic shifts, or what Kuhn referred to as 'scientific revolutions' (Kuhn 1970). In either case, scientific knowledge can be understood as both product and subject of the continuous revision of categories. As knowledge develops in a given field, pre-existing notions and classifications once applied come to be refined, re-defined or else altogether discarded.

The study of health care is no exception to these processes. Indeed, to speak of health care systems or health care policy is already to engage in classification. The health care system is a set of social, economic and political processes concerned with the finance, provision and regulation of health care, that is, that set of things we categorize as constitutive of 'the health care system' rather than, for example, the transport system or the political system.¹

Moreover, beyond this initial qualification, the category of 'health care system' is further classifiable in terms of distinct system *types* that vary according to their combination of different values of specified variables (such as finance, provision and regulation). As such, we may arrive at any number of sub-categorizations that continually refine our understanding and explanation of health care systems.

In trying to reach any single understanding, however fluid, it is important to recall that explanation of every kind risks two sorts of (equal and opposite) problems. One is that it becomes too broad, too general to give much purchase on any particular case; the other is that it is too narrow, too specific to be applicable beyond a very small number of cases.

These are the problems of underdetermination and overdetermination respectively.

Addressing them is the aim of comparative analysis, which seeks to develop what Merton described as 'theories of the middle range' (Merton 1968).² Why is country A like this and B like that, and why is country B like C but very different from D?

Meanwhile, few research projects have the resources to investigate the universe of cases in which they are interested: instead, they concentrate on a sample drawn from the available population. Where a population is (relatively) small and (relatively) diverse, random sampling risks significant error. Comparativists tend, therefore, to work with purposive samples which they take to be representative of the population as a whole. The difficulty they face is in choosing a representative sample even while they have limited knowledge of the population from which it is to be drawn.³

The solution to these problems lies in the very foundations of science and cognition, which is to say, once again, in classification. Classification is the way comparativists mediate between sample and population: a population is deemed to be divisible into a certain number of classes or types, and comparative analysis proceeds on the basis of one or more cases taken to represent or exemplify each type. Comparative research design, therefore, is always a process of iteration between the theory which informs a given classificatory scheme and the data available to substantiate the sense of a case as an example of a given type.

This paper sets out to explore these various functions and features of classification, particularly as they have shaped cross-national, comparative approaches to health care policy and politics. We begin by presenting an outline of the process of classification in social science, noting alternative logics of derivation of categories or types as well as the sociological implications of classification itself. Next, we turn our attention to the classification of health care systems in particular. We present a short history of the classification of health care systems, followed by a critical review of issues arising from it. We conclude by restating the role and purpose of classification in studies of health policy, inviting reflection upon the kinds of classification that have become standard, and suggesting that progress in the field may turn on the extent to which those frameworks might be revised.

Classification in social science

¹ As early as 1973, Mark Field proposed the following 'formal definition': "The health system is that societal mechanism that transforms generalized resources into specialized outputs in the form of health services" (Field 1973, abstract and p 772).

² "(T)heories that lie between the minor but necessary working hypotheses that evolve in abundance during day-to-day research and the all-inclusive systematic efforts to develop a unified theory that will explain all the observed uniformities of social behaviour, social organisation and social change" (Merton 1968, p 39); "(T)estable propositions, derived from fundamental theory, addressing observable phenomena",

(http://www.sociology.columbia.edu/about/main/dept_history/index.html 24 October 2006).

³ Of course, even case studies are cases of something (some category or class).

Identifying classificatory types

Logical expositions of classification argue that it may proceed deductively or inductively. Deductive classification begins with a set of theoretical propositions about a given social phenomenon. These will have empirical referents, which can be predicted to co-vary in specified ways. These sets of variables are then cast as types, of which more or less approximate empirical expressions will be found. The better the approximation of empirical instances to types, the stronger the confirmation of the theory by which they are informed. Inductive classification begins, by contrast, with cases, or a set of empirical instances. Patterns or repeated, specific relationships among variables within and among them are sought. Descriptions of those relationships form categories, and are theorized accordingly.

These different ways of proceeding carry equal and opposite risks. Deductive classification may simply remain too abstract, too divorced from salient features of empirical reality for it to be valid or effective. Inductive classification, meanwhile, risks capturing, at best, only partial representations of reality. That is to say, when classificatory types are derived from particular sets of empirical cases, then those types will inevitably remain limited to the features of the cases from which they are drawn. In practice, however, classification is rarely if ever unidirectional, either from theoretical category to empirical object or vice versa. It is as difficult to imagine constructing categories entirely without regard to their possible empirical referents as it is to see and describe objects without some sense of their generic properties. Classification is never fully deductive nor fully inductive, but the reflexive effect of iteration between theories and cases.

This feature of classification is inherent in the concept of the 'ideal type', the term coined by Weber and regularly used by social scientists to refer to cases deemed to best exemplify the characteristics or properties of a given class. For Weber, an ideal type is created by

the one-sided *accentuation* of one or more points of view and by the synthesis of a great many diffuse, discrete, more or less present and occasionally absent *concrete individual* phenomena, which are arranged according to those one-sidedly emphasized viewpoints into a unified *analytical* construct (Weber 1949, p 90, italics in original).

Ideal types, then, as we have argued for classification and categorization in general, are generated both by 'points of view' and by 'concrete individual phenomena'. Their use is as "conceptual instruments for *comparison* with and *measurement* of reality" (Weber 1949, p 97; Watkins 1952, p 26).⁴

It is worth noting that 'ideal' is not meant by Weber in any normative sense. As Susan Hekman (1983) points out, Weber's development of the concept of the ideal type was intended to explicate both social structures and patterns of meaningful social action and, more specifically, the relationship between the two. Both structure and action can be understood and explained only in terms of the normal assumptions they engender and reproduce. A key implication of the concept of the ideal type, therefore, is that the empirical phenomenon has not only institutional but also idea(tiona)l aspects: the world is constituted at least in part by the way we understand it. The ideal type is a cultural formation as much as an organizational one (cf Freeman 1999). We return to this point in a later section.

The sociology of classification

As our exposition suggests, classification relies on a trade-off between simplification and accuracy. How much of the one to tolerate and the other to demand is necessarily a matter of judgment, and we have (and can have) no measure of how similar systems must be in

⁴ Watkins detects a shift in Weber's conception of the ideal type between the essay on "Objectivity in Social Science and Social Policy" (1949 [1904]) and his posthumous *Wirtschaft und Gesellschaft*, distinguishing between holistic and individualistic versions. The latter text is even clearer that an ideal type is constructed "not by withdrawing from the detail of social life, but by formalising the results of a close analysis of some of its significant details considered in isolation" (Watkins 1952, p 24).

order to place them in the same category. This means that what counts as the same is a matter of convention: as Mary Douglas (1986) puts it so neatly, "similarity is an institution."⁵

Meanwhile, every new case added to a category changes the way we think about both case and category. This is what is described in the sociology of scientific knowledge as the problem of 'meaning finitism':

The essential point is that our classifications are always underdetermined by the promptings of experience or by previous acts of classification. Each new application of a term is sociologically problematic... every act of classification has the form of a judgment, every act changes the basis for the next act, every act is defeasible and revisable, and every act involves reference, not just to the 'meaning' of the term applied, but also to the 'meaning' of all the other terms currently accepted for use in the context (Barnes, Bloor and Henry 1996, p ix).

As Garfinkel has it, each application of a term is made for "another first time."⁶

This makes the process of classification somehow fragile and uncertain. That is to say that every classification is a translation, an iteration between complex data and the conceptual vocabulary available to represent it, between empirical detail and the abstract and generic terms which best seem to fit. It is a way of associating the datum with the theoretical construct, and both together with other similar associations. The process changes both the way the datum is understood and the classificatory scheme which is the resource for that understanding. Such changes are most evident in changes of nomenclature, and in the frequent addition and subtraction of categories or classes. They are, moreover, collective processes, socially validated by scientists working in contexts which, whether by competition or collaboration (or both) they define for each other. "Science and common-sense inquiry alike do not discover the ways in which events are grouped in the world; they invent ways of grouping" (Bruner, Goodnow and Austin 1956, cit Abercrombie 1989, p 113).

The stability of classifications, meanwhile, results from what might be described as a 'conceptual path dependence', which is in turn a function of local cultural traditions in science: "The interpretive traditions of science are largely inherited from others, shared with others, validated by others and sustained in the course of interacting with others" (Barnes, Bloor and Henry 1996, p 26). For similar reasons, debates about classification persist: partly because they engage protagonists from different local traditions, and partly because this is what scientists do, what science consists of: scientific advance frequently consists in recognizing difference where similarity had previously been assumed (Barnes, Bloor and Henry 1996).

It is with these issues in mind that we now turn to the study of health care systems, asking how comparativists have classified them and how those classifications have developed in use. We point to the emergence of a standard or 'normal' classificatory scheme and reflect on its implications.

Classifying health care systems

A short history of health care system classifications

Perhaps the first cross-national classification of health care systems was developed by Odin Anderson in as early as 1963 (Anderson 1963).⁷ Building on a schematic history of the

⁵ It is for this reason that classification became the object of social scientific attention in anthropology in the work of Durkheim and Mauss, and Lévi-Strauss (Boyne 2006).

⁶ Cit Barnes, Bloor and Henry (1996, p 56). This is a form of the problem identified by Sartori (1970) as conceptual 'stretching' or 'travelling' and debated by Collier and Mahon (1993); for discussion of its relevance in comparative health policy, see Burau and Blank (2006). Where Sartori is concerned with accuracy, the sociological argument is more radical in claiming that standards of accuracy are themselves socially informed.

⁷ For a more extended (and more normative) treatment, see Anderson (1972); for an appreciation of the original article, see Freeman and Marmor (2003).

development of health care in Western Europe and North America, he offers a brief descriptive typology of different arrangements for the funding and delivery of health care, closing with thumbnail descriptions of the health care arrangements of three countries: the United States, Sweden and Great Britain. The existing literature, he notes, "gives the impression that all countries are different." He dutifully discusses dimensions of difference, though in a way which suggests a range or continuum of cases rather than categorical distinctions between types:

The health-services systems...can be classified according to several criteria that give some indication of the public policies underlying them. They can be arranged according to the proportion of funds that comes from the government and from private sources. They can be arranged according to the extent to which insurance is provided by government-sponsored health insurance or by some kind of private plans. They can be arranged by the extent to which health insurance covers all types of health services, hospital, physician, drugs and medications, and others, and among services that are insured whether all or only part of the charges are paid by insurance. The countries can be arranged by the extent to which the entire population is covered by insurance. Finally, they can be arranged according to the extent to which the government is a provider of services, actually controlling and using the facilities, or simply a buyer of services, contracting with the hospitals, physicians, and so on (Anderson 1963, p 841).

Anderson goes on to posit a general underlying logic of health policy development, which leads in turn to a teasing formulation of 'polar types' of health systems.

Subsequent comparative analysis of health systems and policies was led in the 1970s mainly by sociologists, and later in the 1980s and 1990s by health economists and political scientists. Different studies have varied in the scope of their inquiry, ranging between the countries of Europe, the OECD and the world. Our review is selective, concentrating on the earliest and the most recent, the most reasoned and explicit, those which best express dominant trends, and those which seem to add to or mark significant departures from what has gone before. The works we have cited are summarized in Table 1.

Mark Field's initial 'stab at typology' (1973, p 773), explicit in using the terminology of 'ideal types' (p 773), is made with little commentary and describes pluralistic, insurance, health service and socialized systems (pp 773-775). A subsequent paper (Field 1980) adds the 'anomic' type (scheme 3, p 401). At the same time, his functionalist sociology leads him to hypothesize gradual convergence as systems evolve. Meanwhile, in a world-wide survey, Terris (1978) identifies three basic systems of medical care: public assistance, health insurance and national health service, deemed to correspond to pre-capitalist (in Asia, Africa and Latin America), capitalist (in western Europe and North America, Australia, New Zealand, Japan and Israel) and socialist (in eastern Europe, parts of Asia, and Cuba) economies respectively. Elling (1994), similarly, covering the globe and using Wallerstein's world-system theory, develops a schema of five types according to the world-wide division of labor and the relative strengths of workers' movements.

In a landmark study which defined a health policy agenda, both analytic and practical, in terms of its implications for the management of public budgets, the OECD (1987) outlines national health service, social insurance and private insurance models (OECD 1987; Burau and Blank 2006). Its subsequent (1992) treatment of health care reform in seven countries (Germany, France, Ireland, the Netherlands, Spain, the United Kingdom and the United States) notes a basic similarity in the goals or objectives of health policy, including adequate coverage, equity in access supported by income protection, freedom of choice for consumers and autonomy for providers, though it distinguished between forms of organization. It further suggests evidence of convergence on what it describes as the 'public contract' model of health care organization and delivery (OECD 1992).⁸

⁸ In essence, this means that health care is financed from public sources, either through taxation or through compulsory insurance contributions; that health finance is administered by public agencies who are not also health care providers, and that providers, if not independent

[table 1 about here]

Analytic comparative studies of health care policy and politics have taken up and consolidated this emergent pattern, a trichotomous classification of health care systems into national health service, social insurance and private insurance types.⁹ Using Sweden, France and Switzerland as exemplars of a range of systems from 'most socialized' to 'most private,' Immergut (1992) analyzes the role of formal political institutions in mediating the influence of the medical profession on the nationalization of health care policy. Tuohy (1999a, 1999b, also 2003) focuses on Britain, Canada and the US to illustrate the consequences of distinctive decision making logics on the policy developments of the 1990s, pointing particularly to the mechanisms of social control conditioning those systems, namely hierarchy in the case of the British National Health Service, collegiality in the case of the Canadian Medicare system, and the market in the US private insurance system. Giaimo and Manow (1999) build on Esping-Andersen's (1990) typology of welfare regimes, taking system-specific modes of financing, provision and access to distinguish 'state-led,' 'corporatist-governed' and 'market-driven' systems in Britain, Germany and the US respectively, identifying the structural features which shape policy preferences and reform strategies in the three systems. In exploring the interrelationship between health care government and transformations of the Schumpeterian democratic state, Moran (1999) also works with Britain, Germany and the US. Yet he is critical of standard classifications that tend to rely exclusively on 'consumption politics' to the neglect of professional or 'production' politics, choosing his sample instead in terms of the roles that the British, German and US health care systems play within a larger state system (Moran 1999, p 18).

Freeman (2000) outlines health care systems according to different dimensions of delivery (doctors, managers and patients), financing (salaries and fees, taxes and contributions), and regulation (markets, hierarchies and networks). In western Europe, different arrangements fall into typical patterns, described as national health services (as in Italy, Sweden and the UK) and social insurance systems (as in France and Germany). In similar vein, Rothgang et al (2005) present a formal account of financing, service provision and regulation as well as specific sets of health system goals and principles to arrive once again at the three-fold distinction of national health service, social insurance and private insurance systems, and again take Britain, Germany and the US as archetypes.

Wendt and Rothgang (2006, cf Wendt, Frisina and Rothgang 2006) go on to develop a typology of health care systems that is formed deductively rather than inductively, and which, moreover, is made fully explicit. If health care systems are composed of three functional processes (financing, provision and regulation), they argue, and if each is subject to one of three modes or domains of coordination (state, society and market), these might exist in 27 (3x3x3) different combinations. Among these it is possible to distinguish 'ideal types' (model combinations, for example, where regulation, finance and provision are all public, all social or all private) from 'mixed forms' (where, again by way of example, regulation might be public, financing social and provision largely private). In turn, some combinations are more typical or likely than others (it being difficult to imagine circumstances in which finance is public but regulation private). The principal claim made for this classification is that it makes it possible to measure how state involvement in health care differs both between system types and within types over time. It has a descriptive functionality, introducing greater subtlety and variety into the standard tripartite scheme, and an evaluative functionality, making it possible to measure and assess change in health care systems with a greater degree of categorical precision than other approaches.

Classification and comparison in health policy: review and assessment

or even private bodies, are invested with the organizational and managerial autonomy to compete for contracts with purchasers.

⁹ For discussion of different comparative projects in health policy, see Marmor, Freeman and Okma (2005).

Mechanic and Rochefort's (1996, pp 240-242) brief account of national health care system classifications points to the absence of any accepted or authoritative taxonomy of health care systems. Yet what is apparent from our review is the existence of something like a 'normal science': a world of so-called national health services, social insurance systems, private insurance systems and (perhaps) 'mixed types', maintained by and maintaining the welfare states and wider political systems of which they are a part. We recognize what this science has produced and how much it has contributed to the understanding of health policy and politics, and acknowledge that we ourselves have been formed by its traditions. Nevertheless, in the paragraphs which follow we identify a series of issues which seem to derive from the way health care arrangements in different countries are classified by comparativists. We make no criticism of any particular work, but mean to assess the way the field has been constructed, cumulatively and collectively. Our criticisms have to do with the way health care states have been modeled after welfare states, with the threefold typology of health systems and the theory on which it is founded, with observations and interpretations of convergence between systems and with the relationship between comparative research and the practical concerns of policymakers.

Classifications of health care states took much from those of welfare states. As early as 1958, Wilensky and Lebeaux distinguished residual and institutional models at issue in US debates. Seeming to follow this terminology, Titmuss (1974, pp 30-31) described 'residual', 'industrial achievement – performance' and 'institutional redistributive' models. None of these were primarily concerned with cross-national comparison, but rather with formal ideological and policy options. Much later, in a field developing quickly in response to the new politics of austerity in the 1980s and the impulse provided by European integration in the 1990s, the trichotomous comparative classification of welfare regimes was defined by Esping-Andersen's (1990) *Three Worlds of Welfare Capitalism*.¹⁰ However, welfare state modeling is usually based on social security arrangements, centering on transfers rather than service delivery or regulation, in part because these are most easily measured. The effect of this is that much of the complexity, variety and salience of the problems raised by health policy are ignored (for elaboration and discussion, see Bambra 2005a and 2005b).

Meanwhile, the standard tripartite or trichotomous classification of health systems into national health services, social insurance systems and private insurance systems shows weaknesses even on its own terms. Three are key. First is an instance of perennial misrepresentation: that of the US as a 'private' system. In fact, it is not: it is simply the closest approximation to a category logically required by the classificatory scheme while no other OECD country comes close at all. So if the US health care system did not exist we would have to invent it; even now, we use the version we imagine as often as the one the data supports. Second, the sort of classification we have been describing is binary: a case is deemed either to belong to a specified category or it is not. However, what is in principle a set of binary decisions (about finance, provision and regulation) is regularly reduced to one fundamental one as a result of the priority given to financing mechanisms both in description and classification.¹¹ Third, and an effect of the attention given to financing, is the relative paucity of attention given to the matter of regulation. Perhaps the most powerful expression of this is the ignorance of the territorial politics of health care in most comparative accounts of system change.¹² In most countries, the debates about state and market which have driven both reform and understanding of it in the 1980s and 1990s have been paralleled, informed or undercut by another about core and periphery, while England and France are now the only health care states of any size which have not devolved a substantial degree of health policy making autonomy to subnational levels. These developments, of course, have been

¹⁰ For a historical review of this literature, see Abrahamson 1999; for additional critiques, see Carrier and Kendall (1986) and Veit Wilson (2000), and for empirical re-assessment of Esping-Andersen's typology, Arts and Gelissen (2002).

¹¹ Fuzzy set theory was conceived to address this problem, though we know of no instance of its being used in comparative health research.

¹² There are exceptions, of course, notably Hollingsworth (1986) and more recently France (2006). Gusmano et al (2006, 2007) take a different line, focusing on the distinctive health politics of cities.

complemented by a process of Europeanization if not globalization: where this leaves the area-based comparison of the health policies of nation-states is yet to become clear.

Elling (1994, abstract) makes an implied criticism of 'typologies... which offer no apparent theoretical derivation.' Our criticism here is slightly different, in that the trichotomous scheme seems to have become separated from the theory by which it was and is informed. Its original conception was historical-structural: its base is economic, focused on the particular relations between capital, labor (including medical labor) and the state, as played out in different institutional settings. But the interest in institutions has overgrown that in political economy. While classification is always carried out according to some purpose, the generic, residual purpose of 'describing systems in such a way that similarities and differences between them become clear and make it possible to account for change in terms of the effects of and on those similarities and differences' remains essentially institutionalist. If we describe systems in terms of their organizational configuration, our explanations and evaluations of them will be cast the same way (Freeman 1999).

This is the more problematic the more complex those organizational configurations become, and the more they are separated from their economic base. The universalization of access to health care, at least in Europe, has separated health politics from the politics of organized labor (with the partial exception of organized health labor). It has made for explosive growth in the size of the sector across countries, accompanied by organizational and occupational differentiation and consequent further differentiation of the relationships between those increasingly specialized actors and agencies. Part of this process of specialization, of course, has taken place in the domain of management. Health systems are quintessentially managed systems, complex arrangements of complex organizations of a kind unimaginable at their point of origin (while it is our conception of that point of origin which still determines the way we think of them). This has made the politics of health care (like that of other public services) the politics of accounting and accountability, information and technology (including information technology) as much as of resource distribution. And these are rarely captured in our prevailing categories of state, market and community.

Meanwhile, some commentators set out distinctions between different kinds of health systems (ideal or perhaps 'original' types) in order to claim an increasing convergence between them (Mechanic and Rocheffort 1996, cf Mechanic 1975). Early developmental classifications, similarly, assumed some sort of evolution toward greater state or public responsibility for health care, in respect of each of the dimensions (financing, provision and regulation) according to which countries were previously distinguished. But is this the erosion of distinction, or of the system of classification used to represent it? Why is it that the more we know about different systems the more similar they seem? One of the reasons is that they all seem so variegated. Yet, while there is much talk of 'mixed forms' of financing, provision and regulation, a 'blurring' of regimes (Goodin and Rein 2001, Rothgang, Cacace and Schmid 2006) is not the same as convergence on a single model. As Monika Steffen shows (this volume) even systems we have long taken to be members of the same category develop in very different, distinctive ways. The convergence thesis may be as much an indication of the breakdown of a previous system of classification as empirically determined change in the nature or characteristics of what is classified. What is at issue is not just the changing nature of health systems, but the instability of classifications.

Finally, a key implication of Weber's conception of the 'ideal type' (above) is that it serves as a practical as well as analytic resource. Actors need some sense of the system of which they are a part in order to act meaningfully and purposefully within it, and for such action to be valid or successful, that 'sense of the system' needs to be reasonably widely shared.¹³ Our comparative classifications seem to have mattered to policy makers when they have been concerned with what kinds of health care state to advocate and build, as in the southern Europe of the 1980s, or the eastern Europe of the 1990s. But in the wake of what has been widely cast as an era of 'big' reform, it is notable that the policy making community is

¹³ This is why, following recent reform of health care in the Netherlands, the difficulty of establishing an agreed description of the new system (public, private or hybrid) has become such a significant public issue [Okma, this volume].

concerned with surveys, benchmarks, rankings, and detailed case reports rather than system types. To the extent that one of the principal claims made for comparative research is that of learning from others, it may be undone by comparativists' emphasizing categorical distinctions between systems.

Classification and its limits

The kind of classifications we make shape the comparisons we make and, in turn, the kind of conclusions we draw from them. In this paper, we have used classification to reflect upon the business of comparison in and of health policy. We have sought to be faithful to Lowi's precept concerning the central place of classification in analyzing public policy and the importance of reflection on its basis and the nature of hypotheses it might generate. We have tried to present a view of classification as essential or intrinsic to cross-national, comparative research as well as intrinsically problematic. We have argued that classification should be understood sociologically as well as scientifically, conveying a sense that social science is social in its process (like all science) as well as in its object.

We have shown that classification is the very stuff of the comparative analysis of health policy. We have shown the power of what we describe as the 'normal' classification of health systems (following Kuhn's characterization of 'normal science'), describing its evolution and its summative expressions. The continuing salience of our 'problem of classification' is measured by the extent to which debate continues, often as much implicitly as explicitly, about which characteristics should be taken to be definitive or constitutive of the health system; about whether or not these fall into typical clusters; about whether or not these types should be empirically or normatively defined; about which countries are instances of which types and about which countries best represent each particular type. Because of the necessary work it does of aggregation and simplification, it will always be found wanting in terms of the accuracy of its representation of individual cases. Classification is a problem, therefore, and so it should be. Our concern here has been to provide a positive account of this problem.

Our assessment of comparative research in health policy leads us to concur readily with Arts and Gelissen's review of welfare state research more widely conceived: "the issue of ideal-typical welfare states cannot be satisfactorily answered given the lack of formal theorizing and the still inconclusive outcomes of comparative research." Nevertheless, they continue, "In spite of this conclusion there is plenty of reason to continue to work on and with the original or modified typologies" (Arts and Gelissen 2002, abstract, p137). Indeed, we might go further in saying not only that there is good reason to work with typologies but also that we have little choice but to do so. We are left with an understanding of classification as both stable and fragile, authoritative and flawed, inevitable, uncertain, certainly necessary, but difficult. We cannot do without it.

In the study of health policy, the issue is the extent to which our 'normal' typology might or should be modified and revised. One of the foundational texts of comparative social policy (Flora 1986) identified a 'growth to limits' among the west European welfare states. This constituted an intellectual and not least political problem which has driven much of the field since then. Now, two decades later, we wonder whether the intellectual framework by which that growth to limits has been understood has not itself found its limits. Specifically, we ask for how long comparative investigation conducted according to this framework of national health services, social insurance systems and private insurance systems can realistically expect to tell us anything new about health systems and the way they work.

To the extent that scientific development consists in revising classifications (Kuhn, and introduction, above), we might take the evolution of classification as a measure of progress in comparative health policy. And by the same token, we should expect to make little theoretical development without revising our classifications (Doty and Glick 1994). But how should we do so? Of course, different projects will develop different answers to this in order to suit different theoretical and empirical interests. Here, we do no more than identify a particular set

of challenges to comparison (and therefore classification) posed by a particular line of thinking about health systems and their organization.

Classification and complexity

To the extent that health systems are indeed systems, it is remarkable how little they have been theorized in systems terms. While the comparative analysis of health policy has retained some of the vocabulary of systems thinking it has relinquished the functionalism which it originally expressed. Systems thinking is now more prevalent in the organizational sociology and management in which policy makers are trained than in the policy sciences. Meanwhile, an increase in the complexity of health systems has been widely observed, by those who use them, work in them and manage them as much as by those who would research and analyze them. How might comparativists come to understand this complexity?

Our social scientific classifications are derived from natural scientific models such as those of chemistry or biology, and which in those fields are losing hold. Is comparative analysis in health policy really like chemistry, in which we think we can elucidate the structure of matter by assuming a limited number of elemental forms which might be combined in different ways? In biology, meanwhile, the great Linnaean project of classification was undone by Darwin's thesis that species are fundamentally unstable:

Speciation was once seen as an all or nothing affair leading to complete isolation of one group from another. It is now clear that for micro-organisms, in particular, there is very little such isolation, and genetic material moves in many ways from one kind of organism to another. In fact it has become common to conceive of the genome of an ecosystem rather than the privatized genome of an individual organism (Dupré 2006, p 31).

How can we describe the 'ecosystems' of health care in such a way that we might identify and classify their 'genomes'? Might this way of thinking give a better account of the hybrid forms which seem to defeat our current classifications? Does it make comparison meaningless, or might we develop some new classificatory scheme by which it continues to be possible and relevant?

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Table 1: Overview of health care system classifications

Author(s)	Classification of Health Care System Types	System Criteria/Dimensions	Cases Sampled
Anderson (1963)	A continuum of types including a range of 'polar types'	Modes of financing and delivery	Britain, Sweden, US
Field (1973, 1980)	'Ideal types' of pluralistic, insurance, health service, socialized and anomic systems	Functionality of system; major modalities used to produce 'Gross Medical Product'; system boundaries; internal components; and socio-structural support	US, France, Japan, Britain, former USSR, Eastern Europe
Terris (1978)	Public assistance, health insurance, national health service system types	Nature of economic system: <i>pre-capitalist</i> , <i>capitalist</i> , or <i>socialist</i>	Asia, Africa, Latin America; W Europe, N America, Australia, New Zealand, Japan and Israel; E Europe, parts of Asia, Cuba
Elling (1994)	Five types: (1) core capitalist; (2) core capitalist, social welfare; (3) industrialized socialist-oriented; (4) capitalist dependencies in periphery and semi-periphery; and (5) socialist-oriented, quasi-independent of world system	Worldwide division of labor (core, semi-periphery, and periphery); strength of workers' movements	Variety of cases including the US, Switzerland, Germany, Canada, Japan, Britain, Sweden, the former USSR
OECD (1987)	National health service, social insurance, and private insurance system types	Modes of financing and delivery	OECD countries
OECD (1992)	Mixed types comprising national health service, social insurance, and private insurance systems	Sub-systemic models (and mixtures thereof) of financing and delivery including <i>out-of-pocket</i> , <i>voluntary</i> and <i>public reimbursement</i> , <i>voluntary contract</i> and <i>public contract</i> models	Belgium, France, Germany, Ireland, Netherlands, Spain and Britain
Immergut (1992)	Range of 'most socialized' to 'most private' system types	Degree of government intervention in health care	Sweden, France, Switzerland
Tuohy (1999a, 1999b, 2003)	National health service, social insurance, and private insurance system types	Modes of social control: <i>hierarchy</i> , <i>collegiality</i> , <i>market</i>	Britain, Canada, US
Giaimo and Manow (1999)	State-led, corporatist governed, and market-driven system types	Modes of financing, service provision and claims to benefits	Britain, Germany, US
Moran (1999)	National health system, compulsory insurance scheme, and market driven system types	Role in global state system	Britain, Germany, US
Freeman (2000)	National health service and social insurance system types	Modes of financing, delivery and regulation	Italy, Sweden, Britain France, Germany
Rothgang et al (2005)	National health service, social insurance, and private insurance system types	Modes of financing, service provision, and regulation	Britain, Germany, US
Wendt et al (2006)	National health service, social insurance, and private insurance system types	Modes of financing, service provision, and regulation	